

***U.S. Patent Application of Kling et al., Serial No.: 10/049,147
Amendment After Final Rejection and Request for Reconsideration – Art Unit 2644***

IN THE CLAIMS:

Please amend claims 1 and 12.

1. (currently amended) Loudspeaker combination, comprising at least two loudspeakers (2, 3), of which one (3) is preceded by a low-pass frequency filter (4) and the other (2) by a phase shifter (5), said at least two loudspeakers (2, 3), one including at least one loudspeaker (3) that radiates low frequency tones and at least one other (2) loudspeaker that radiates low and at least medium frequency tones,

said phase shifter (5) in front of said at least one other loudspeaker (2) radiating low as well as of medium frequency tones being set such that said phase shifter 5, are being is set, causes the low frequency tones emanating from said at least one other loudspeaker (2) to have substantially the same phase as the low frequency tones emanating from said at least one loudspeaker (3), whereby said low frequency tones emanating from said loudspeakers reinforce each other and enhance the volumes of said low frequency tones, thereby allowing smaller-sized speakers for a desired volume output.

2. (previously presented) Loudspeaker combination as claimed in claim 1,
wherein said at least one other of the loudspeakers (2, 8) also radiating tones of the medium frequency range is similar and of the same structural type and form as said at least one loudspeaker (3) with a preceding low-pass filter (4).

3. (previously presented) Loudspeaker combination as claimed in claim 1,
wherein at least several of said loudspeakers (2, 3, 8) standing alone have identical or at least highly similar frequency characteristics.

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4. (previously presented) Loudspeaker combination as claimed in claim 1,

wherein at least several of said loudspeakers (2, 3, 8) of identical structural type and form.

5. (previously presented) Loudspeaker combination as claimed in claim 1, wherein

said loudspeaker combination in its base form comprises two loudspeakers (2, 3), of which the one (3) is only preceded by a low-pass frequency filter (4), such that it only radiates tones in the bass frequency range, and the other loudspeaker (2) is preceded by a phase shifter (5) alone, such that it radiates tones of the medium as well as also of the low frequency tone ranges,

said loudspeaker (2) radiating tones of the low as well as also of the medium frequency tone ranges, in being adjusted to set the phase setting of its bass frequency range to substantially correspond to the base frequency range of said bass loudspeaker (3).

6. (previously presented) Loudspeaker combination as claimed in claim 1,

wherein said phase shifter (5) is an all-pass filter with a phase shifting element.

7. (previously presented) Loudspeaker combination as claimed in claim 1,

further comprising at least one treble loudspeaker (14) with a preceding high-pass filter 36 is provided in this loudspeaker combination.

8. (canceled)

9. (canceled)

10. (previously presented) Loudspeaker combination as claimed in claim 1,

wherein two loudspeakers are provided, both loudspeakers radiating low frequency tones, and being of identical structural type and form,

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that the one loudspeaker radiates only low frequency tones, the other loudspeaker at least low frequency tones and medium frequency tones,

and that both loudspeakers are set to to create low tones of substantially the same phase.

11. (previously presented) Loudspeaker combination comprising at least two loudspeakers (2,3), of which one (3) is preceded by a low-pass frequency filter (4) and the other (2) by a phase shifter (5),

said at least two loudspeakers (2,3) including at least one loudspeaker (3) that radiates low frequency tones and at least one other (2) loudspeaker that radiates low and at least medium frequency tones,

said phase shifter (5) in front of said at least one other loudspeaker (2) radiating low as well as medium frequency tones being set such that said phase shifter (5) is set to be tuned to the phase position of said at least one loudspeaker (3) radiating only lower frequency tones,

wherein said at least one loudspeaker (3) is preceded by a low-pass filter (4) and the said at least one other loudspeaker (2) by an all-pass filter (5) with a phase shifter,

a further additional loudspeaker (8), radiating, in addition to tones of medium frequency, also tones of the bass frequency range, with a preceding all-pass filter (10) and in addition to the all-pass filter (5) preceding the loudspeaker (2), a low-pass filter (9) precedes it, which, however, relative to the low-pass filter (4), has a higher upper pass frequency, said additional loudspeaker (8), in addition to the all-pass filter (10), is preceded by a further all-pass (11) with phase shifter,

said all-pass filter (10) in its phase position being tuned to low-pass filter (4) preceding the said at least one loudspeaker (3) and the other all-pass filter (11) to the low-pass filter (9) preceding

the loudspeaker (2),

while said all-pass filter (5), is tuned to the low-pass filter (4) in its phase position.

12. (currently amended) Loudspeaker combination, comprising at least two loudspeakers (2,3), of which one (3) is preceded by a low-pass frequency filter (4) and the other (2) by a phase shifter (5),

said at least two loudspeakers (2,3) including at least one loudspeaker (3) that radiates low frequency tones and at least one other (2) loudspeaker that radiates low and at least medium frequency tones,

said phase shifter (5) in front of said at least one other loudspeaker (2) radiating low as well as medium frequency tones being set such that said phase shifter (5) is set to be tuned to the phase position of said at least one loudspeaker (3) radiating only lower frequency tones,

wherein said loudspeakers (2, 3-8) of this loudspeaker combination are preceded by amplifiers (6-7, 12) as active circuit elements,

said at least one loudspeaker (3) with amplifier (7) is only preceded by a low-pass filter (4), said at least one other loudspeaker (2) by a low-pass filter (9) and an all-pass filter (5) with phase shifter tuned in its phase position to the low-pass filter (4), that across a tap between the all-pass filter (5) and the low-pass filter (9) the a loudspeaker (8) is equipped with an amplified amplifier (6), which is preceded by an all-pass filter (11) tuned to said low-pass filter (9),

while said all-pass filter (5) is tuned to the said low-pass filter (4).